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BRIEFER ARTICLES

THE FLOWERS OF WASHINGTONIA

(WITH FIVE FIGURES)

While my paper on the genus *Washingtonia*¹ was passing through the press, I had the pleasure of receiving from Dr. BECCARI a copy of his recent monograph of the Coryphine palms of America.² In his treatment of *Washingtonia* this distinguished palmographer gives much weight to certain floral characters which have been heretofore overlooked, and it seems desirable that these should be brought to the attention of American botanists, in order that their value may be tested by field studies.

These distinctions relate to the characters of the filaments, the stigma, and the summit of the ovary. In the flowers of *Washingtonia* the filaments of the stamens opposite the lobes of the petals are consolidated with them

for nearly one-third their length, and are much thicker than the free filaments opposite the sinuses.

Washingtonia filifera Wendl. is defined as having the lobal filaments thickened - fusiform; the ovary turbinate, 3-lobed, and strongly gibbous at

top; the stigma undivided ("puntiforme, sempre?"). *Fig. 1* represents this species, and is drawn from flowers of a tree growing in the Botanical Garden at Palermo, Italy.

FIG. 1. — *W. filifera* Wendl., Botanical Garden, Palermo, August, 1906.— O. BECCARI. $\times 3.5$.

Its variety *microsperma* Beccari differs in its slightly less strongly fusiform lobal filaments, but mostly in its somewhat smaller flowers and decidedly smaller seeds. *Fig. 2* shows the variety, drawn from flowers of a tree in the Garden Ricasoli, Port Ercole, Tuscany.

¹ PARISH, S. B., A contribution toward a knowledge of the genus *Washingtonia*. BOT. GAZETTE 44:408-434. figs. 12. Dec. 1907. I take this opportunity to correct two errors: Page 409, line 18, for "eleven" read "fifteen;" page 415, line 3 from bottom, for "the trees" read "most of the trees."

² BECCARI, ODOARDO Le Palme Americane della tribú Corypheae. Estratto dalla Webbia 2:pp. 343. Oct. 1907. Firenze.

The rank of species and variety seems here assigned somewhat arbitrarily, and it may be of interest to give the history of the trees which have been taken as their respective types. The palm accepted as typical *W. filifera* is a certain tree in the Garibaldi Garden, at Palermo, Italy, which was raised from seed at the Botanical Garden in the same city, in 1874, and which began to flower in 1892. The source of the seed is not known.

Five or six living plants of the *Prichardia filifera* of his trade catalogue were exhibited by LINDEN at the international exhibition at Florence, in May, 1873. Three of these exhibition plants are now large trees, producing flowers and fruit, and these are taken by BECCARI as the types of his *W. filifera microsperma*. As these palms are directly traced to LINDEN, and were exhibited by him as *Prichardia filifera*, it would seem probable that they are about as near as we are likely to get to authentic representatives of WENDLAND'S first published species.

The flowers of *W. robusta* Wendl. are described as having the lobal filaments tuberculately enlarged at the coherent base, and abruptly subulate above; stigma bilabiate 3-parted into three short lobes; ovary turbinate at summit, but neither excavated nor gibbous. On these grounds BECCARI sustains the specific rank of this palm; and should they prove constant, it may be desirable to follow this disposition. *Fig. 3* is from a flower of a tree in the Botanical Garden at Palermo. Its historical identification with the Wendlandian plants is not related. The first two characters hold in the flowers of Californian trees which have been referred here, so far as concerns the few specimens I have examined. The ovarian character is less satisfactory.

W. gracilis Parish has flowers very near those of the last, except that the summit of the turbinate ovary is very distinctly 3-lobulate. *Fig. 4* was drawn from a flower taken from Mr. McLEOD'S tree, a panicle of which is the subject of *fig. 10* of my previous paper. BECCARI regards this palm as a variety of *W. robusta*. It would be possible, although in my opinion

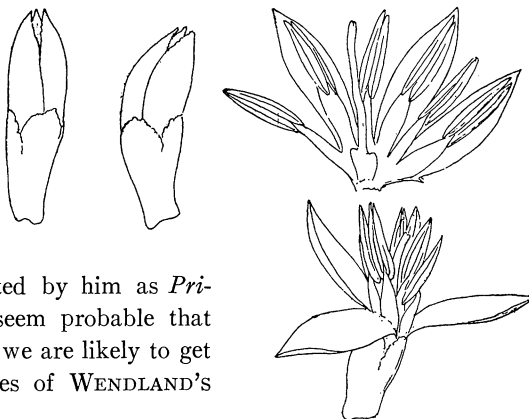


FIG. 2.—*W. filifera microsperma* Becc., Garden Ricasoli, Port Ercole, Tuscany, August, 1906.—O. BECCARI. $\times 3.5$.

undesirable, to regard all the *Washingtonias* as varieties of a single polymorphous species, but the one now under consideration would of all be the least capable of such comprehension. Without question floral characters



FIG. 3.—*W. robusta* Wendl., Botanical Garden, Palermo, August, 1906.—O. BECCARI. $\times 3.5$.

are of greater diagnostic value than those drawn from foliage or habit; but when the latter are of marked distinction, and apparently constant, they cannot be refused great weight.



FIG. 4.—*W. gracilis* Parish, Riverside, Cal. $\times 5$.

BECCARI had not had an opportunity of examining flowers of *W. sonorae* S. Watson, and he regards it as a doubtful species, which may be a variety of *W. robusta*, suspecting that the obtusely triangular insertion of

the petiole in the leaf blade may not prove a constant character. Through the kindness of Dr. B. L. ROBINSON, of the Gray Herbarium, I have received a few flowers taken from the type specimen of this species, collected by WILLIAM PALMER at Guaymas, Mexico. One of these is represented in fig. 5, the anthers being omitted, as all had fallen from the flowers. It will be seen that this has the characters assigned to *W. filifera* so far as the filaments are concerned, the character of *W. robusta* as to the divided tip of the stigma, and the markedly lobate ovary of *W. gracilis*. Such a combination of characters throws a shadow of uncertainty on their value. It

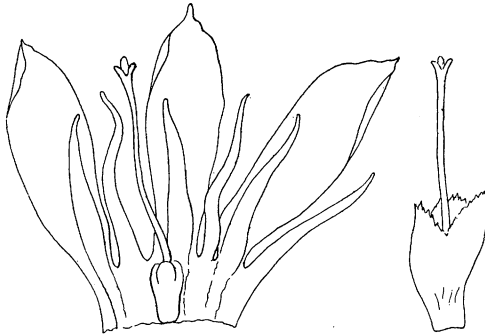


FIG. 5.—*W. sonorae* S. Watson. From PALMER's type, Guaymas, Mexico. $\times 5$.

must be remembered, however, that they are drawn from a study of too few individuals. What is now desirable is that the proposed characters, both those drawn from the flower and fruit, and from the foliage and habit, should be put to the test by the examination of numerous examples, growing under varying conditions. Especially is it to be hoped that botanists who may have the opportunity should study carefully the groves near Guaymas, and those reported to exist on the seacoast of northern Lower California. Until such extended studies shall be made it cannot be considered that we stand on altogether firm ground in the discrimination of the various indicated species and varieties of *Washingtonia*.

For the drawings from which figs. 1, 2, and 3 are reproduced I am indebted to the kindness of Dr. BECCARI. They are enlarged seven diameters. Figs. 4 and 5 are from drawings by Mrs. CHARLOTTE M. WILDER, and are enlarged ten diameters. All the drawings are reduced one-half in the reproduction.—S. B. PARISH, *San Bernardino, California*.